

What is Claimed is

- [c1] An electrophoretic display device comprising a unitary spacer layer sandwiched between two conductive film substrates, at least one of which is transparent, unitary spacer layer defining a multiplicity of individual reservoirs within the display device, each of the individual reservoirs being filled with a display liquid and each of the individual reservoirs being addressable with an electric field.
- [c2] The electrophoretic display device according to claim 1, wherein each of the multiplicity of individual reservoirs has a width of about 5 microns to about 200 microns.
- [c3] The electrophoretic display device according to claim 1, wherein the spacer layer includes solid partition portions separating the individual reservoirs, the solid partition portions having thicknesses of from about 10 to about 100 microns.
- [c4] The electrophoretic display device according to claim 1, wherein the display liquid has a color and contains one set of particles with a different, contrasting color from the color of the colored display liquid.
- [c5] The electrophoretic display device according to claim 1, wherein the display liquid is transparent and contains at least two sets of particles with different, contrasting color to each other.
- [c6] An electrophoretic display device comprising a spacer layer sandwiched between two conductive film substrates, at least one of which is transparent, spacer layer defining a multiplicity of individual reservoirs within the display device, each of the individual reservoirs being filled with a display liquid, wherein the spacer layer is selected from the group consisting of (a) a screen in which holes within the screen define the individual reservoirs, (b) a laser punched spacer layer comprised of a sheet having holes laser punched therein in which the laser punched holes define the individual reservoirs, (c) a pocket spacer layer comprised of sheets joined together and containing a pattern of pockets within the sheets in which the pockets define the individual reservoirs, (d) an etched photoresist layer formed upon one of the conductive film

substrates in which holes etched in the photoresist layer define the individual reservoirs, and (e) a composite etched layer comprised of a composite of two photoresist layers sandwiching a conductive film in which holes etched in the composite define the individual reservoirs.

- [c7] The electrophoretic display device according to claim 6, wherein the spacer layer is the screen.
- [c8] The electrophoretic display device according to claim 7, wherein the screen is comprised of woven fibers, which have been flattened and fused at fiber joints.
- [c9] The electrophoretic display device according to claim 6, wherein the spacer layer is the laser punched spacer layer.
- [c10] The electrophoretic display device according to claim 6, wherein the spacer layer is the pocket spacer layer.
- [c11] The electrophoretic display device according to claim 10, wherein the pockets of the pocket spacer layer are formed by dimples in one of the sheets.
- [c12] The electrophoretic display device according to claim 10, wherein the pocket spacer layer comprises a composite pocket layer of a first pocket sheet in which the display liquid has a first color and a second pocket sheet layer in which the display liquid has a second color, wherein the first pocket sheet and the second pocket sheet are placed atop each other and wherein there are no overlapping pockets in the composite pocket layer.
- [c13] The electrophoretic display device according to claim 12, wherein the first color is black and the second color is an additional color.
- [c14] The electrophoretic display device according to claim 10, wherein the pocket spacer layer comprises a composite pocket layer of three pocket sheets, each pocket sheet exhibiting a different color, wherein the three pocket sheets are placed atop each other and wherein there are no overlapping pockets in the composite pocket layer.
- [c15] The electrophoretic display device according to claim 14, wherein the three

colors are cyan, magenta and yellow.

[c16] The electrophoretic display device according to claim 10, wherein the pocket spacer layer comprises a composite pocket layer of four pocket sheets, each sheet exhibiting a different color, wherein the four pocket sheets are placed atop each other and wherein there are no overlapping pockets in the composite pocket layer.

[c17] The electrophoretic display device according to claim 16, wherein the four colors are cyan, magenta, yellow and black.

[c18] The electrophoretic display device according to claim 6, wherein the spacer layer is the etched photoresist layer.

[c19] The electrophoretic display device according to claim 6, wherein the spacer layer is the composite etched layer.

[c20] The electrophoretic display device according to claim 19, wherein the conductive film of the composite etched layer is a metal.

[c21] The electrophoretic display device according to claim 6, wherein each of the multiplicity of individual reservoirs has a width of about 5 microns to about 200 microns.

[c22] The electrophoretic display device according to claim 6, wherein the spacer layer includes solid partition portions separating the individual reservoirs, the solid partition portions having thicknesses of from about 10 to about 100 microns.

[c23] The electrophoretic display device according to claim 6, wherein the device further includes a conductive path on a bottom surface of one of the conductive film substrates in a pattern such that each of the individual reservoirs are separately addressable with an electric field.

[c24] The electrophoretic display device according to claim 6, wherein the transparent conductive film substrate comprises a film of polyethylene terephthalate coated with indium tin oxide.

[c25] The electrophoretic display device according to claim 6, wherein the transparent conductive film substrate comprises a film of polyethylene terephthalate coated with silver.

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